

Claims

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What is claimed is:

1. A high-pressure discharge lamp for vehicle headlights having a discharge vessel, which is sealed in a gas-tight manner, and in which are arranged two electrodes and an ionizable filling for producing a gas discharge, wherein the ionizable filling comprises xenon and halides of the metals sodium, scandium, indium and zinc.
2. The high-pressure discharge lamp as claimed in claim 1, wherein the halides are iodides.
3. The high-pressure discharge lamp as claimed in claim 2, wherein
  - the volume of the discharge vessel has a value in the range from  $23 \text{ mm}^3$  to  $30 \text{ mm}^3$ ,
  - the cold filling pressure of xenon has a value in the range from 9000 hPa to 13000 hPa,
  - the content of sodium iodide has a value in the range from 0.15 mg to 0.30 mg,
  - the content of scandium iodide has a value in the range from 0.10 mg to 0.25 mg,
  - the content of zinc iodide has a value of less than or equal to 0.10 mg, and
  - the content of indium iodide has a value of less than or equal to 0.05 mg.
4. The high-pressure discharge lamp as claimed in claim 2, wherein the thickness or the diameter of the electrodes has a value in the range from 0.27 mm to 0.36 mm, and the distance between the electrodes is less than 5 mm.
5. The high-pressure discharge lamp as claimed in claim 2, wherein

- the high-pressure discharge lamp has an outer bulb (16) which surrounds the discharge vessel (10),
  - the discharge vessel (10) is made of silica glass and has a volume in the range from 23 mm<sup>3</sup> to 30 mm<sup>3</sup>,
  - the thickness or the diameter of the electrodes (11, 12) has a value in the range from 0.27 mm to 0.36 mm,
  - the distance between the electrodes (11, 12) is less than 5 mm,
  - the cold filling pressure of xenon has a value in the range from 9000 hPa to 13000 hPa,
  - the content of sodium iodide has a value in the range from 0.15 mg to 0.30 mg,
  - the content of scandium iodide has a value in the range from 0.10 mg to 0.25 mg,
  - the content of zinc iodide has a value of less than or equal to 0.10 mg, and
  - the content of indium iodide has a value of less than or equal to 0.05 mg.
6. The high-pressure discharge lamp as claimed in claim 1, wherein the molar ratio of sodium to scandium has a value in the range from 3 to 6.
7. The high-pressure discharge lamp as claimed in claim 2, wherein there is approximately the following linear relationship between the cold filling pressure of the xenon and the content of zinc iodide:
- $$Y = -0.015 X + 0.207$$
- where X is the numerical value of the cold filling pressure of xenon in hPa, and Y is the content by weight of zinc iodide in mg.